## Startup-time control apparatus and stop-time control apparatus of internal combustion engine, and control methods thereof, and record medium

Patent number:

US2003051692

**Publication date:** 

2003-03-20

Inventor:

MIZUTANI KOICHI (JP)

Applicant:

TOYOTA MOTOR CO LTD (JP)

Classification:

- international:

F02D11/10; F02D31/00; F02D41/04; F02D41/06; F02N11/08; F01P7/16; F02D41/38; F02D41/40; F02D11/10; F02D31/00; F02D41/04; F02D41/06; F02N11/08; F01P7/14; F02D41/38; F02D41/40; (IPC1-

7): F02N17/00

- european:

F02D11/10B; F02D31/00B2; F02D41/04B;

F02D41/06D4; F02N11/08B

Application number: US20020226151 20020823 Priority number(s): JP20010274697 20010911

Also published as:

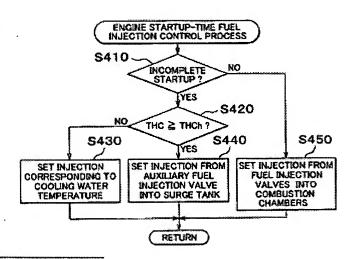
US6986331 (B2)
US2005211227 (A1)
US2003083127 (A)
FR2858017 (A1)
FR2858016 (A1)

more >>

Report a data error here

## Abstract of **US2003051692**

If it is determined that the present engine startup is a high-temperature startup, immediately fuel injection in concert with start of cranking is prohibited. After a delay time elapses following the start of cranking, or when THC<THCh is satisfied, fuel injection is started. Therefore, the cranking during the delay time cools interior of the combustion chambers. Since fuel injection starts after the cooling, pre-ignition can be prevented.



Data supplied from the esp@cenet database - Worldwide